



Florida Department of
TRANSPORTATION

Final “As-Built” Plans Using BlueBeam

**Office of Construction
Final Estimates**

Overview of Discussion Topics:

- Toolbars, Views, Search, Panels
- Extract pages
- Add Text
- Properties, Lock Markups, Subject, Construction Remarks
- Cloud Tool
- Insert page
- Stamps
- Measure Tools
- Embed back-up documentation
- Check Mark
- Summary of Markups
- As-Built Signature Sheet
- Digital Signature/Certification
- DFEO Markup and Validation

Office Resources

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Most Requested

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Welcome

The Office of Construction is committed to

News

Contractor QC Plan worksheet
Posted: July 17, 2015

2015 Estimate Cut-Off Dates
Posted: Nov. 3, 2013

Process Review Schedule
Posted: September 19, 2014

2015/2016 Letting Dates Updated
Posted: July 11, 2014

Latest Monthly Estimates Available
Posted: On-going

View Recently Updated Construction Re
Posted: On-going

Office of Construction

Training



Topics

Construction Training & Qualification Program (CTQP)

[CTQP Information & Providers](#)

[Reduced Cost CTQP Training for Small Businesses](#)

[CTQP Website](#)

[CTQP's Technical Review Teams \(TRT\)](#)

[Sample TRT Meeting Notice](#) **DOT Users Only**

General Information

[Construction Training Manual \(CTQM\)](#)

[District Construction Training Administrators](#)

[Training Related Information](#)

[Meeting Minutes or Training Memos](#)

[Schedules \(Construction Training\)](#)

[Training Video Shorts](#)

[CBT Request Form](#)

[Trainee Privacy Statement](#)

Office of Construction / Training

Training Video Shorts



Maintenance of Traffic

Structures

Drainage and Environmental

Geotechnical

[Sound Barrier-Noise Wall Construction](#)
[Pump Calibration for Auger Cast Piles](#)

Asphalt and Concrete Paving

Contractor Prequalification

Contractor Past Performance Rating

Alternate Contracting

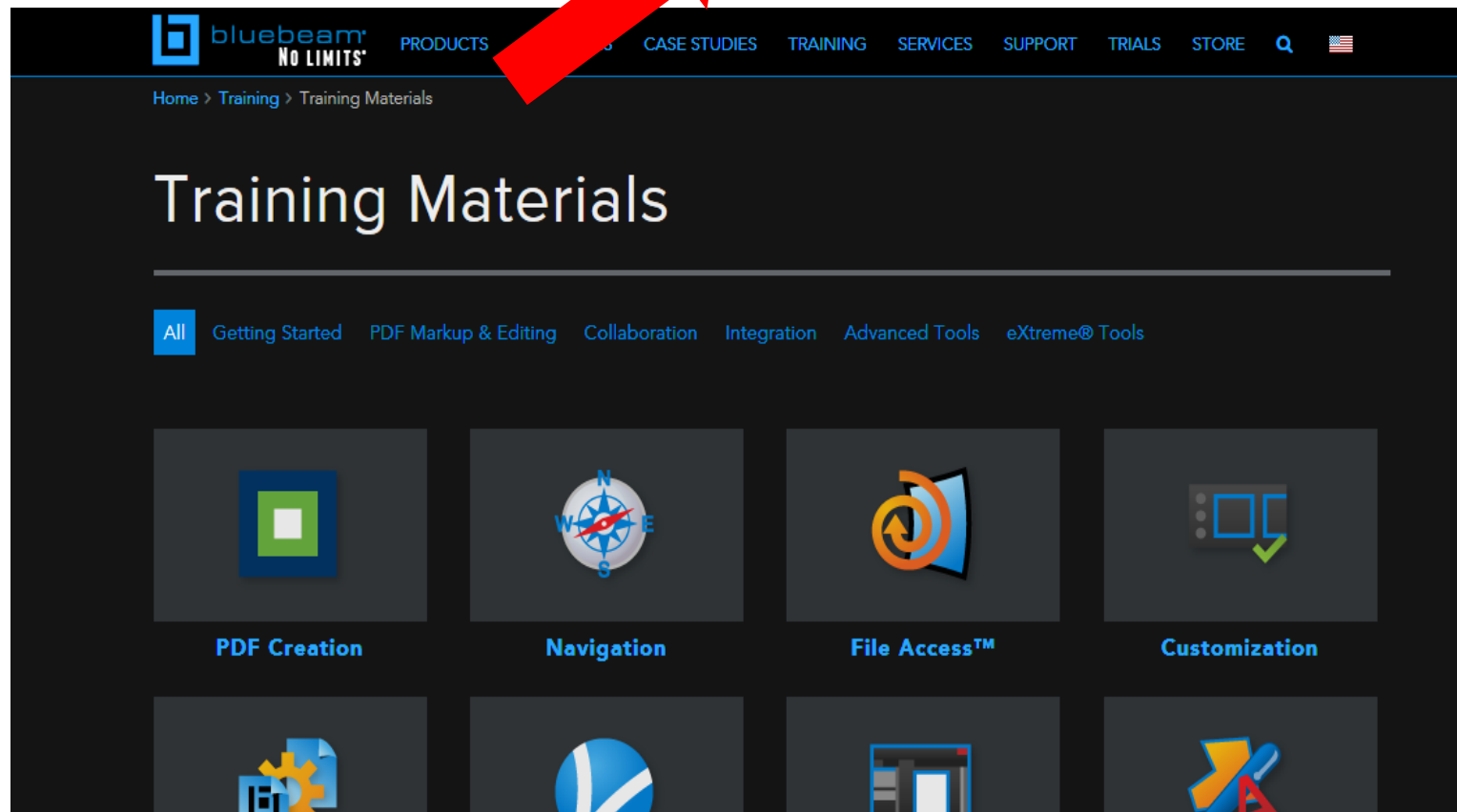
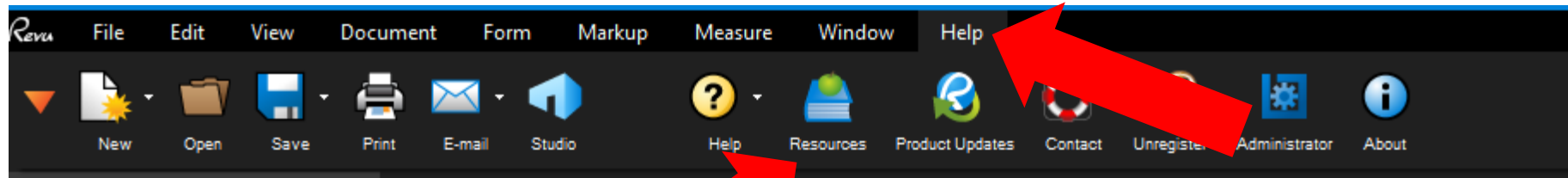
Contract Modifications

Final Estimates

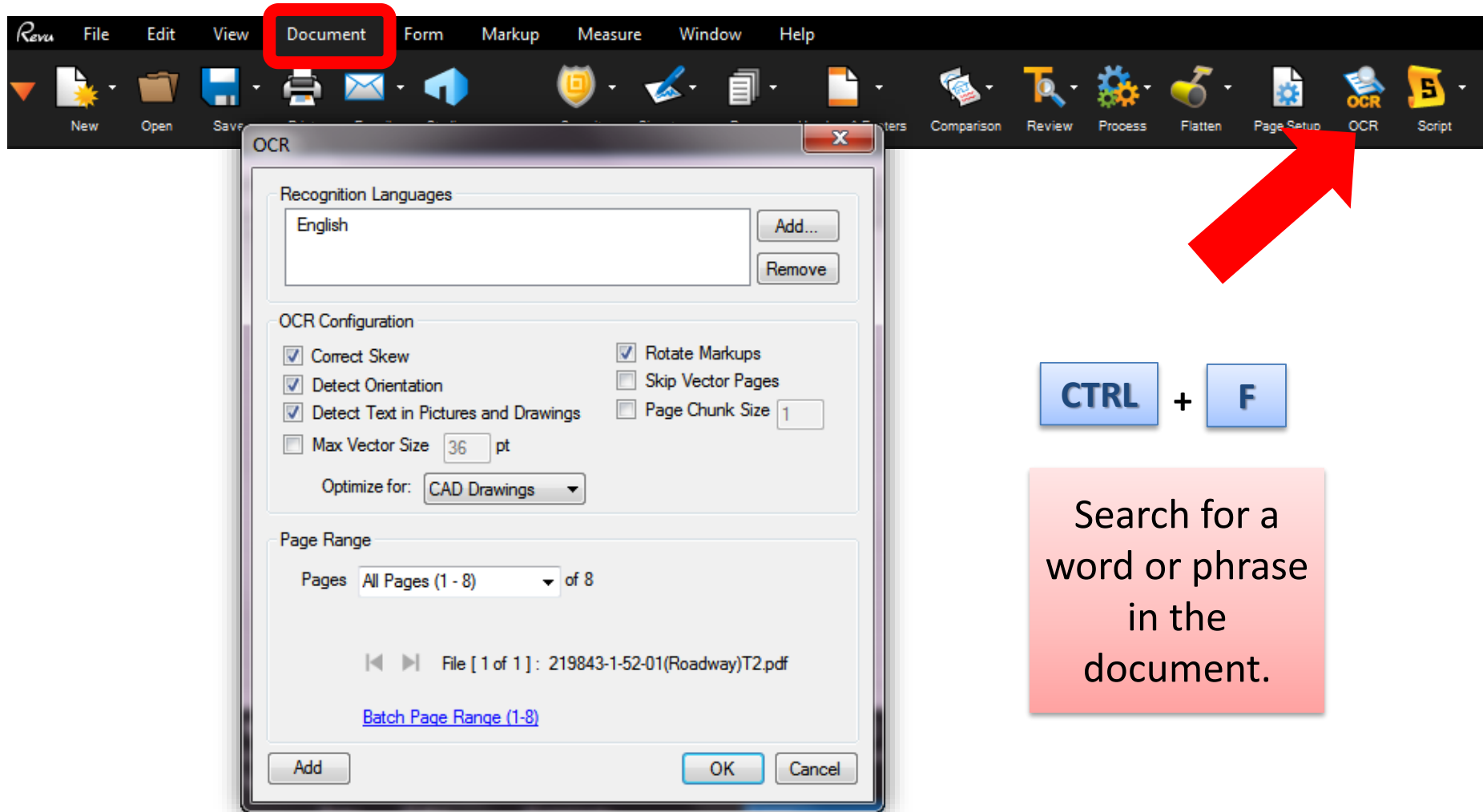
[BlueBeam Training](#)

[FAQ](#)

BlueBeam: Help/Resources



Word Search (OCR)



CTRL

+

F

Search for a
word or phrase
in the
document.

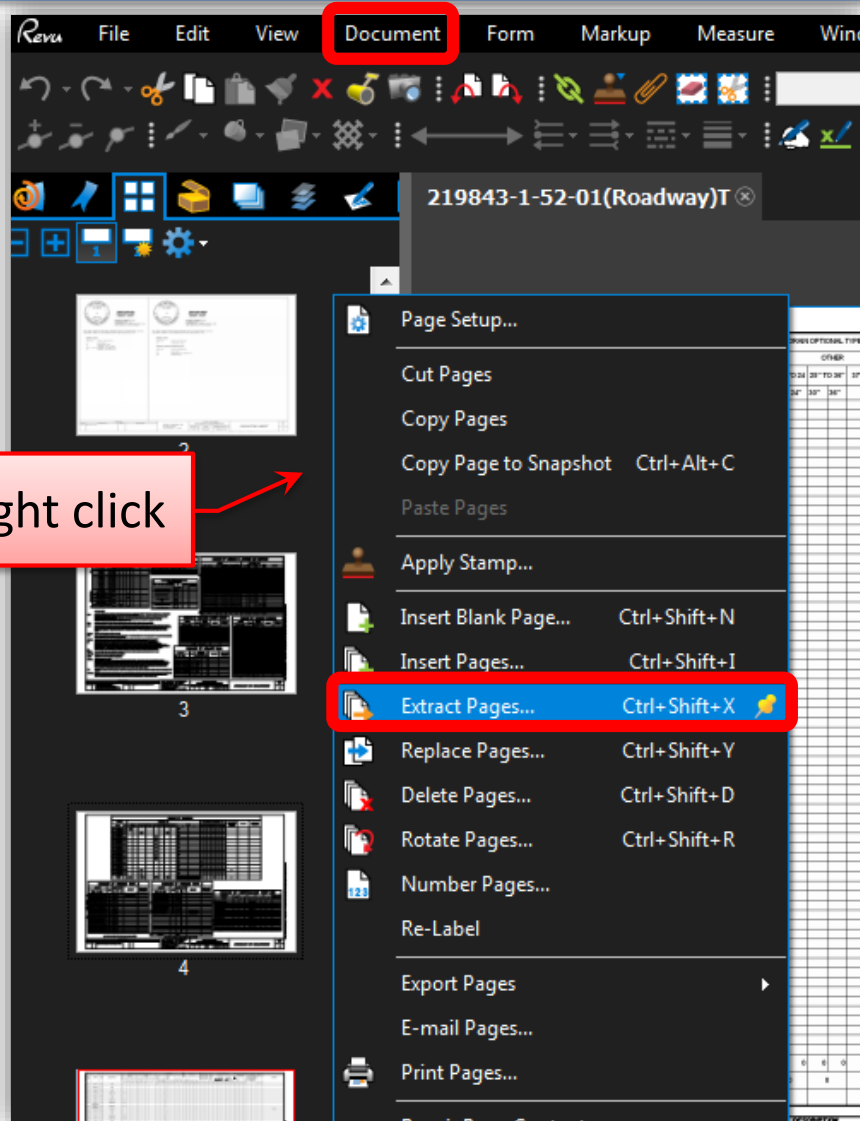
[illegible]

Extract Pages

Signed and sealed Contact Plans, revisions to Contract Plans, and/or As-Built drawings (such as Surface Water Management per Spec. 7-2.3.1, Directional Bore per Spec. 555, Traffic Control Signals and Devices per Spec. 611, etc.) must be **extracted** in order to insert these into the Final “As-Built” plans.

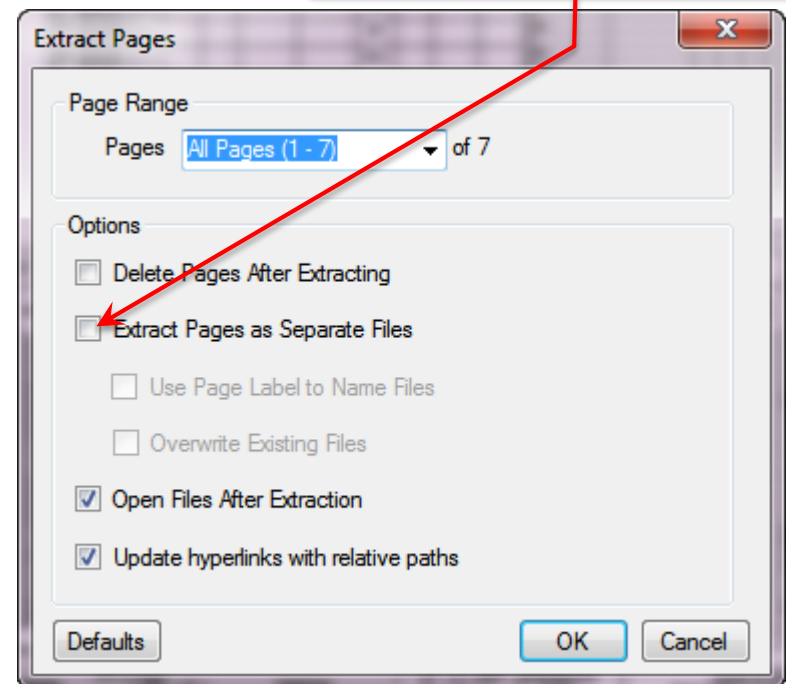
- Select “Document” or “Thumbnails”
- Right-click
- Select “Extract Pages”
- Select location to save file
- Copy or insert pages into the Final “As-Built” Plans set.
(See next slide.)

Extract Pages (Cont.)



Right click

Leave unchecked to save all extracted pages as one PDF file.

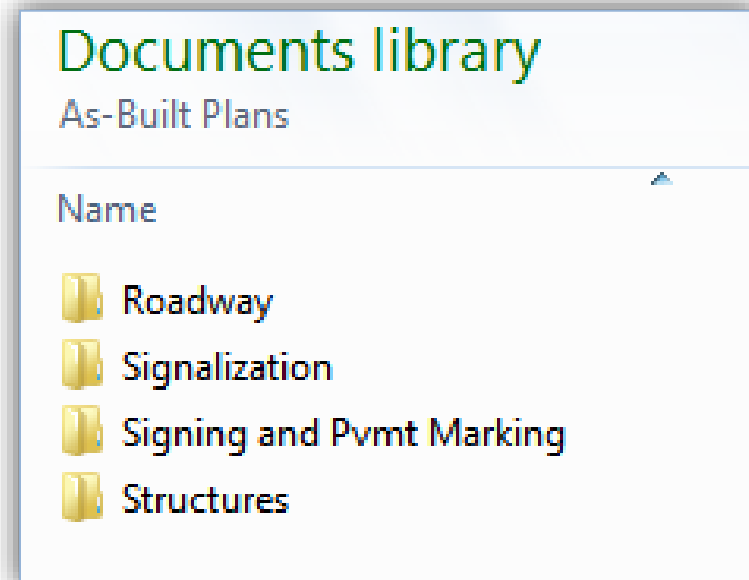


Plans Components

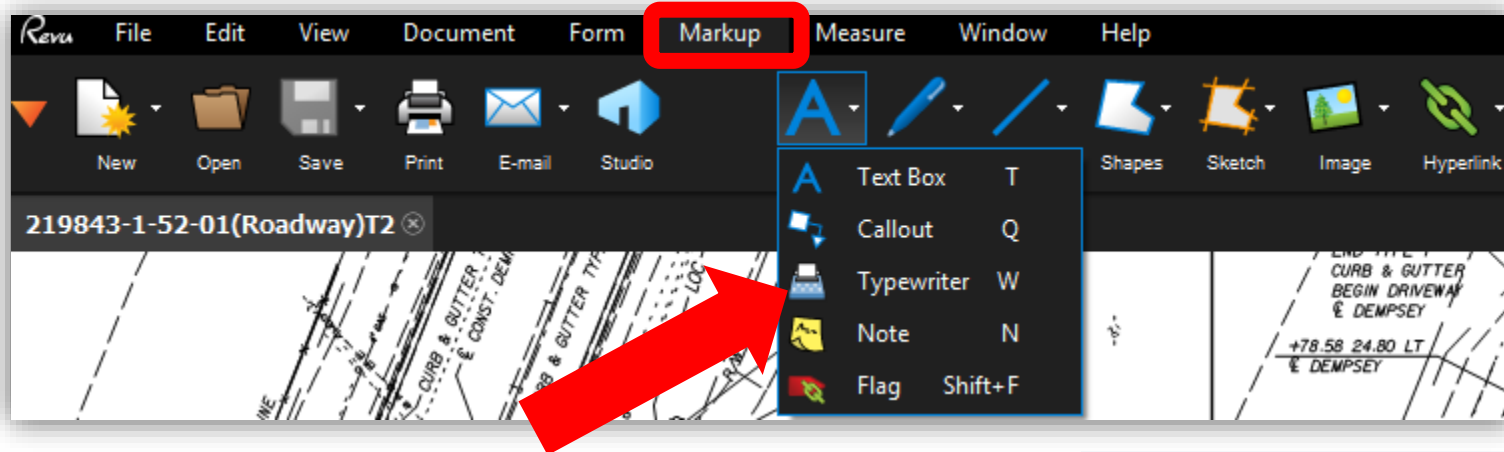
It is recommended that As-Built Plans be saved into components.

If Contract Plans were not separated into components, this can be done by selecting the plans sheets, **extracting** and saving into separate folders.

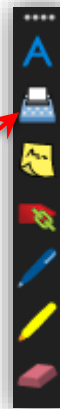
- Select “Document” or “Thumbnails”
- Right-click
- Select “Extract Pages”
- Select location to save file
(See previous slide.)



Insert Text



Or select the
“Typewriter”
icon on the
side menu.



Avoid using the “Text Box”, as this will create a “box” that will block any text or lines behind the box, and will require more formatting.

Adjust the font type, size and color in the Properties panel.

Lock Markups

- Lock the markups:
 - Avoid “accidental” deletions of markups
 - Can be done in the Properties panel or in the Markup panel

Subject	Page	Lock	Checkmark	Author	Date	Color	Comments
Checkmark	Page 1	<input type="checkbox"/>	<input type="checkbox"/>	CN982MI	8/24/2015 12:44:37 PM	■	
Final As-Built Plans (1)							
Final As-Built Plans	Page 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	CN982MI	8/24/2015 1:00:22 PM	■	Final "As-Built" Plans
Line (1)							

Typewriter Properties

General

Author: CN982MI

Subject: Final As-Built Plans

Final "As-Built"

8/24/2015 12:44:37 PM

☐ Lock (0) Replies

Appearance

Color: ■

Fill Color: ■

Shape: Rectangle

End: — Auto

Font: Arial

Font Size: 20 Auto

Line Space: 1.00

Margin: 0.00

Text Color: ■

Alignment: [Icons]

Font Style: B I U ¹³ x¹

Subject

- Subject:
 - Allows to “name” the markup. This is how the markup will be listed in the Summary of markups (below).
 - Can be done in the Property panel or in the Markup panel



Typewriter Properties

General

Author: CN982MI

Subject: Final As-Built Plans

Final "As-Built"

Modified: 8/24/2015 12:...

☐ Lock [\(0\) Replies](#)

Appearance

Color: ☐

Fill Color: ☐

Opacity: 100

Fill Opacity: 100

Font: Arial

Font Size: 20

Line Space: 1.00

Margin: 0.00

Text Color: ☐

Alignment: ☐ ☐ ☐ ☐ ☐

Font Style: **B** *I* U ¹⁴ ₁₄ ^x

Subject	Page	Lock	Checkmark	Author	Date	Color	Comments
Checkmark	Page 1	<input type="checkbox"/>	<input type="checkbox"/>	CN982MI	8/24/2015 12:44:37 PM	<input type="checkbox"/>	
▼ Final As-Built Plans (1)							
Final As-Built Plans	Page 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CN982MI	8/24/2015 1:00:22 PM	<input checked="" type="checkbox"/>	Final "As-Built" Plans
▼ Line (1)							

Construction Remarks and Sheet Description

- Can be done in the Properties panel or in the Markup panel

Author	Date	Color	Comments	Count	Layer	Construction Remarks	Sheet Description
CN982MI	8/24/2015 1:03:36 PM	■	Final "As-Built" Plans				
CN982MI	8/24/2015 1:04:40 PM	■					
CN982MI	8/24/2015 1:05:36 PM	■				Strike through	Key Sheet

Line Properties

General

Author: CN982MI

Subject: Line

Modified: 8/24/2015 1:05:36 PM

(0) Replies

Style: [Dropdown]

Start: [Dropdown] Auto

End: [Dropdown] Auto

Custom

Construction R... Strike through

Sheet Descripti... Key Sheet

Layout

X1: 6.9889 Inches

Y1: 1.7029 Inches

X2: 9.9943 Inches

Y2: 1.6883 Inches

Length: 3.0055 Inches

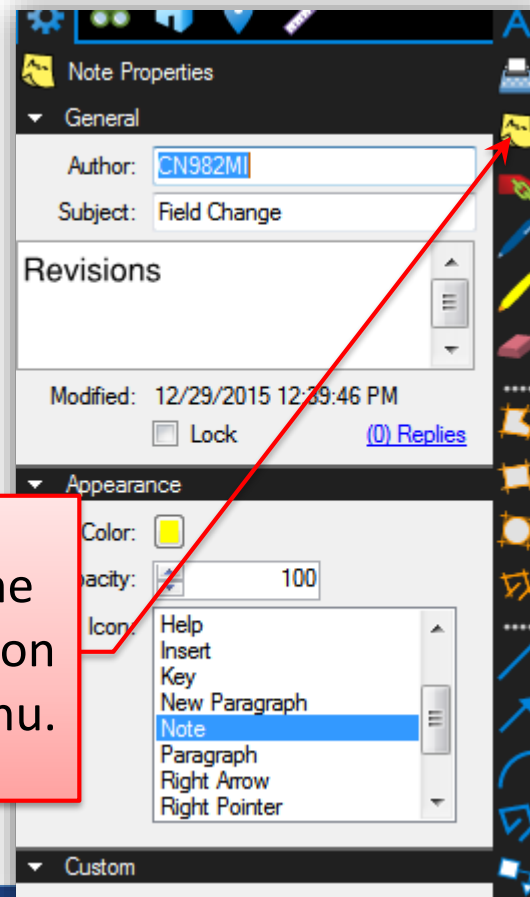
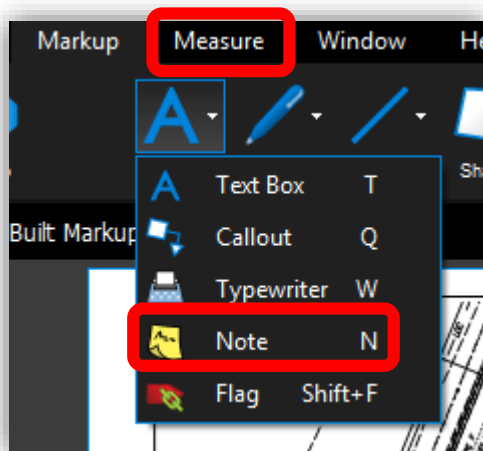
Insert Cloud

The screenshot displays the MicroStation software interface. The top menu bar includes File, Edit, View, Document, Form, Markup, Measure, Window, and Help. The Markup menu is open, showing options: Rectangle (R), Ellipse (E), Polygon (Shift+P), Cloud (C), and Cloud+ (K). A red arrow points from the Cloud option in the menu to a cloud annotation on a technical drawing. The drawing is a plan view of a road project, labeled 'SR 10 (US 90) MAHAN DRIVE'. It shows various road features, including a 'B.2 TYPE 1 TRAFFIC SEPARATION', 'CONCRETE & GUTTER TYPE 7', and 'EXISTING 24" RCP 175 RADIUS'. A red cloud annotation is drawn around a specific area on the drawing. A red box highlights the 'Cloud' icon in the side menu on the right. A text box with an arrow pointing to the 'Cloud' icon in the side menu contains the text: 'Or select the "Cloud" icon on the side menu.'

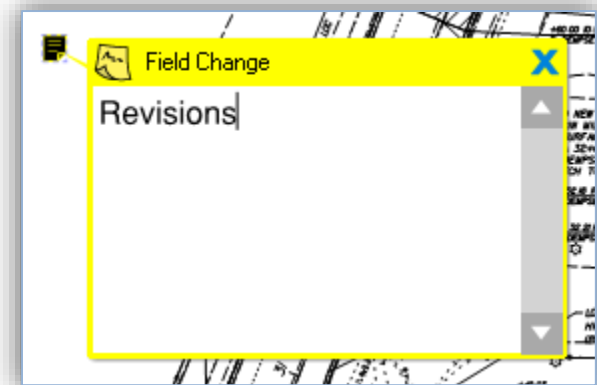
Or select the "Cloud" icon on the side menu.

Notes (during internal review)

Electronic Notes may be added during an internal review. These notes must be removed from the Final “As-Built” Plan set before submission to the DFEO.



Or select the
“Note” icon on
the side menu.

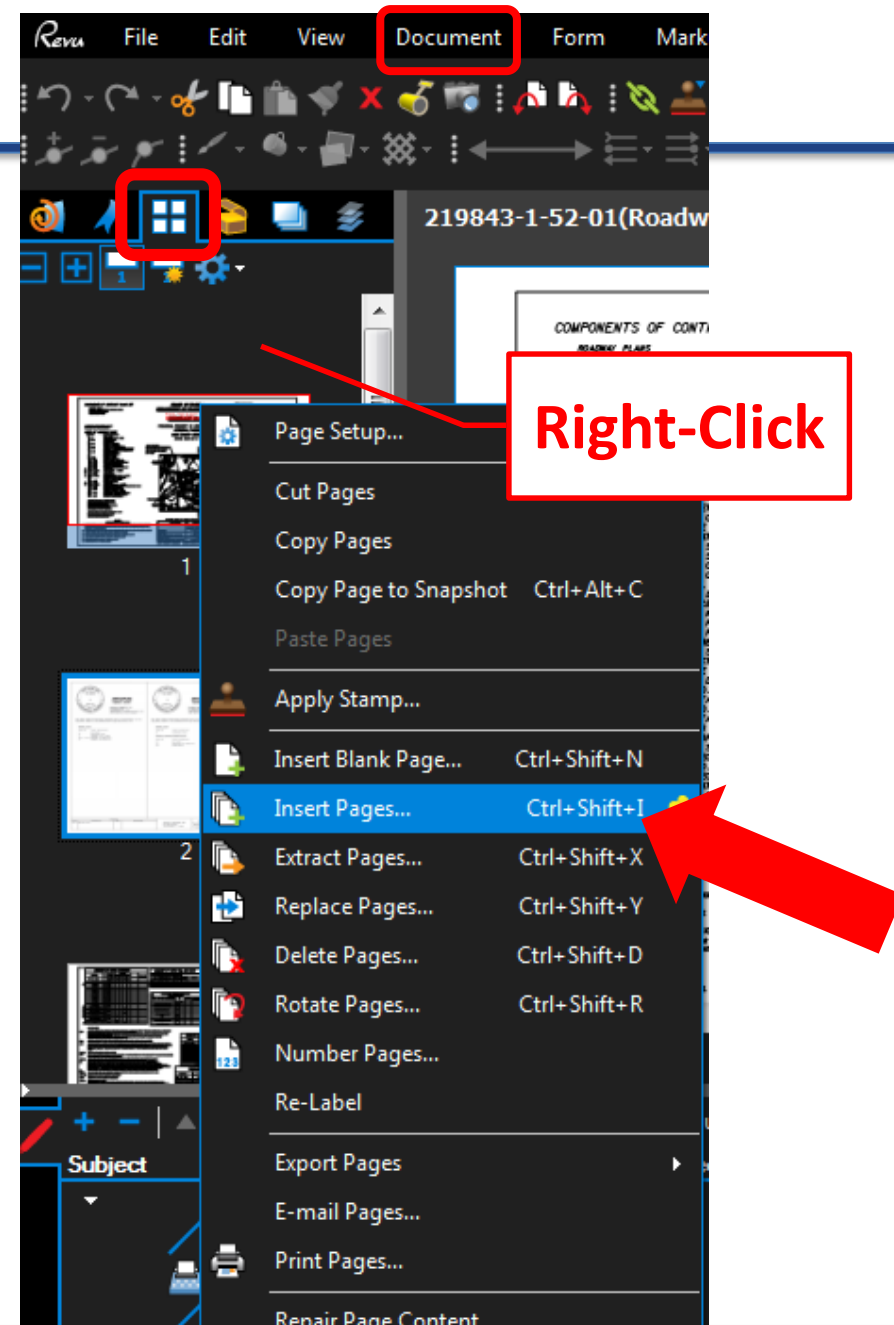


Insert Page

Follow these steps to insert sheets from Extracted files or the Final As-Built Signature Sheet into the Final “As-Built” plans:

Insert single or multiple pages:

- Select “Document” or “Thumbnails”
- Right-click
- Select “Insert Pages”
- Select file to insert

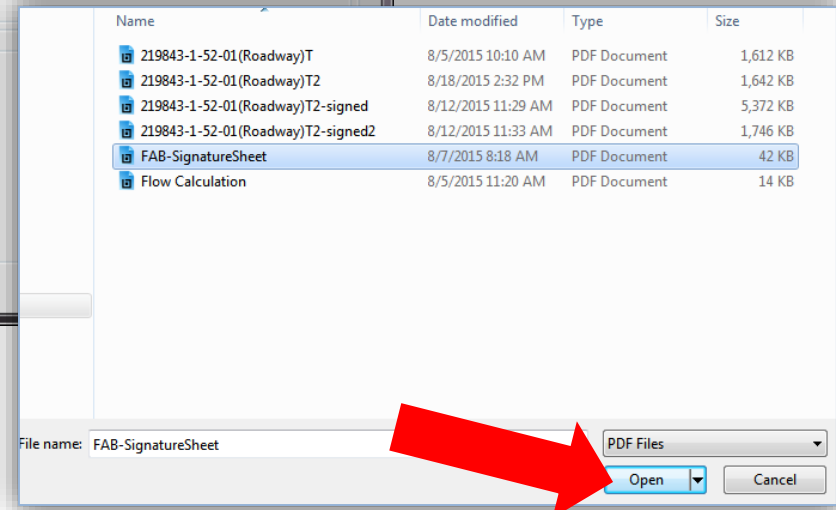
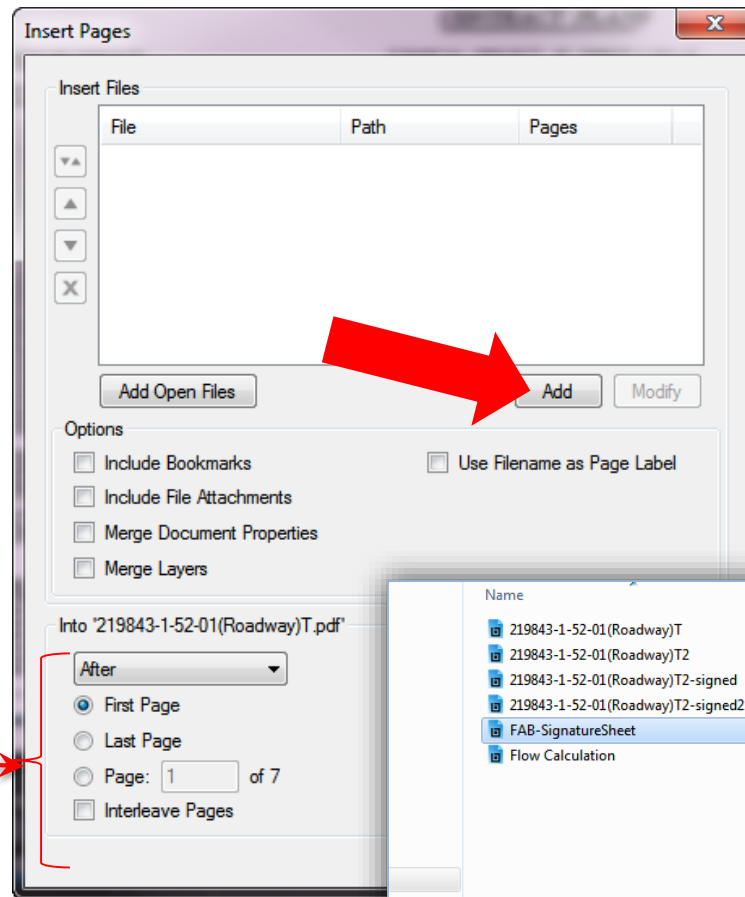


Insert Page (cont.)

Select file to insert

- Click “Add”
- Select file
- Click “Open”

Select the destination of the sheets to insert in the dialog box or “drag and move” the thumbnails to the correct location.

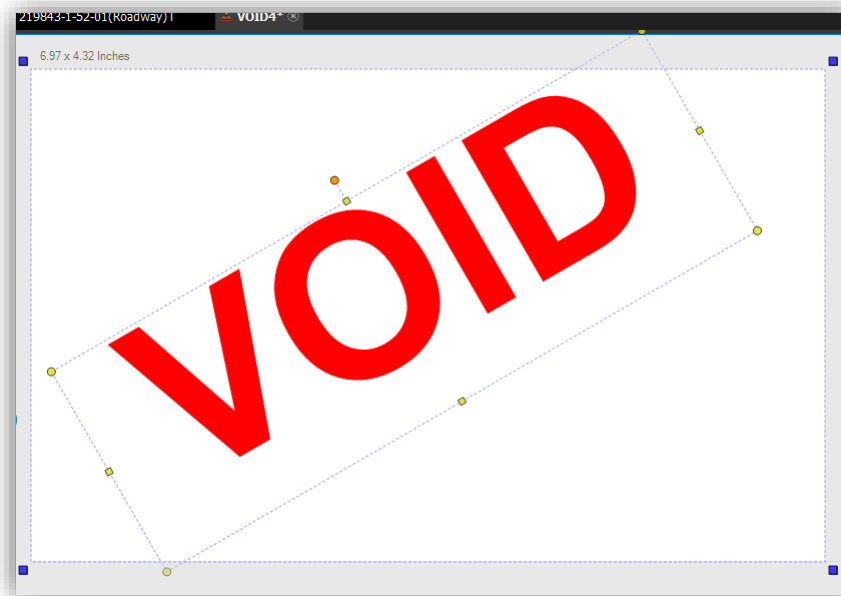


Create Stamp

The image shows a software interface with a dark theme. On the left, a vertical menu is open, displaying various stamp templates such as 'Seal.pdf', 'APPROVED', 'Date.pdf', 'DraftPrint.pdf', 'EuropeanDate.pdf', 'EuropeanDateTime.pdf', 'ForReview.pdf', 'Preliminary.pdf', 'Proprietary.pdf', 'Released.pdf', 'Revised.pdf', 'RightPointingTag.pdf', 'Seal.pdf', 'Watermark', 'Create Stamp...', 'Import Stamp...', and 'Change Stamp Folder...'. A red arrow labeled '2' points to the 'Create Stamp...' option. On the right, a horizontal toolbar contains icons for 'Text', 'Pen', 'Lines', 'Shapes', 'Sketch', 'Image', 'Hyperlink', 'Attach', and 'Stamp'. A red arrow labeled '1' points to the 'Stamp' icon. Below the toolbar, a 'Create Stamp' dialog box is open. It has fields for 'Subject' (VOID), 'Author' (CN982MI), 'Template' (Text), 'Width' (Text), 'Opacity' (Text with Border, Text with Date and Border, Text with Rounded Border), 'Rotation' (Normal (none)), and 'Blend Mode' (Normal (none)). The 'Text' option under 'Width' is highlighted with a red box. The dialog box has 'OK' and 'Cancel' buttons at the bottom right.

Create Stamp (Cont.)

- A new “Tab” will open
- Type the text for the stamp (Ex.: VOID)
- In the Properties Panel:
 - “Name” the Subject
 - Select the font, size, rotation angle, Subject, etc.
 - Lock



Text Box Properties

General

Author: CN982MI

Subject: VOID

Modified: 9/28/2015 11:29:22 AM

☐ Lock [\(0\) Replies](#)

Appearance

Color: ☐

Fill Color: ☐

Opacity: 100

Fill Opacity: 100

Line Width: 0.00

Style:

Shape: Rectangle

End: Auto ☐

Font: Arial

Font Size: 144 ☐ Auto

Line Space: 1.00

Margin: 0.00

Text Color: ☐

Alignment: ☐ ☐ ☐ ☐ ☐

Font Style: **B** *I* U ☐ ☐ ☐

Layout

X: 0.3190 Inches

Y: 2.9531 Inches

Width: 5.9861 Inches

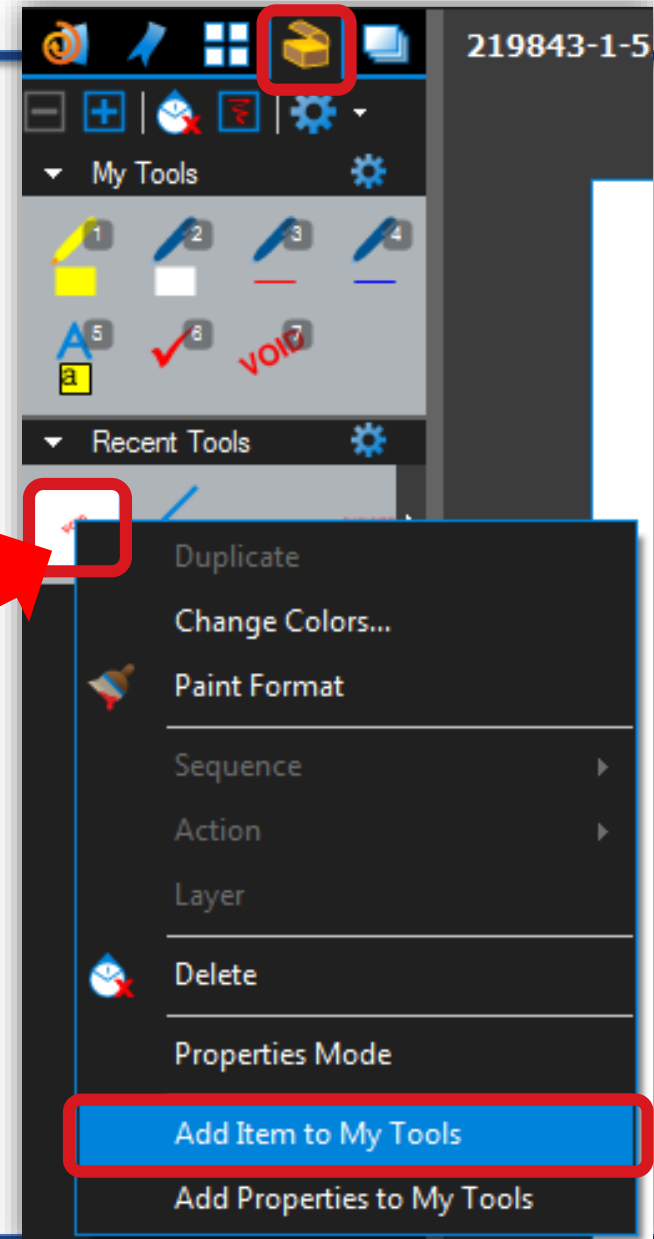
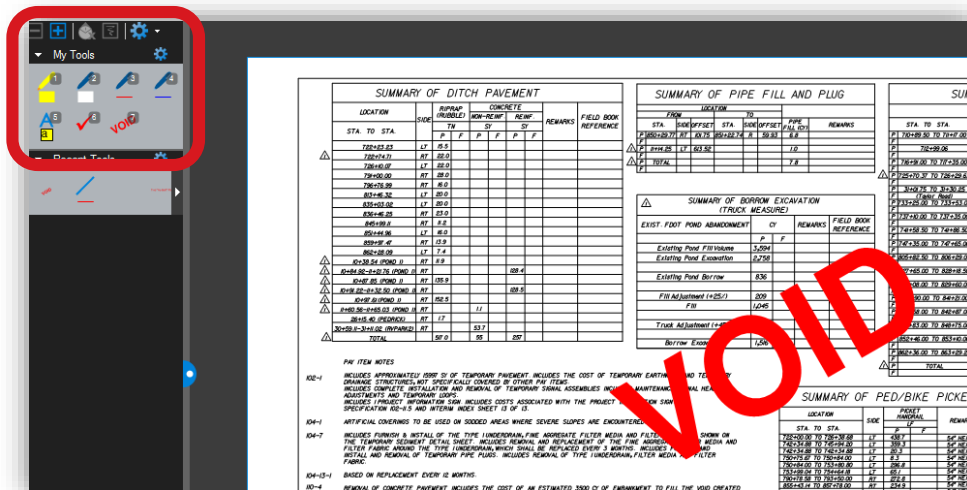
Height: 4.3278 Inches

Rotation: 330 °

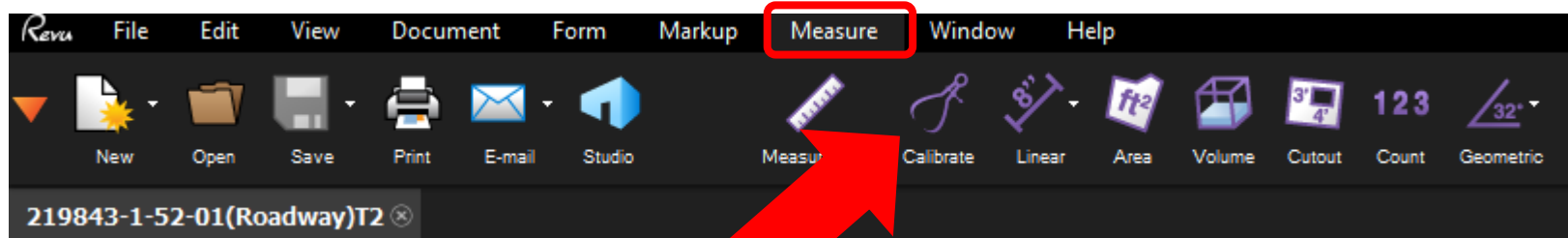
Options

Create Stamp (Cont.)

- In the Left Panel, select “Tool Chest”
 - Look up the recently used tools
 - Right-click
 - Select “Add Item to My Tools”
 - Select Item from the “My Tools” to reuse. No need to re-create the stamp. Can create any stamp.



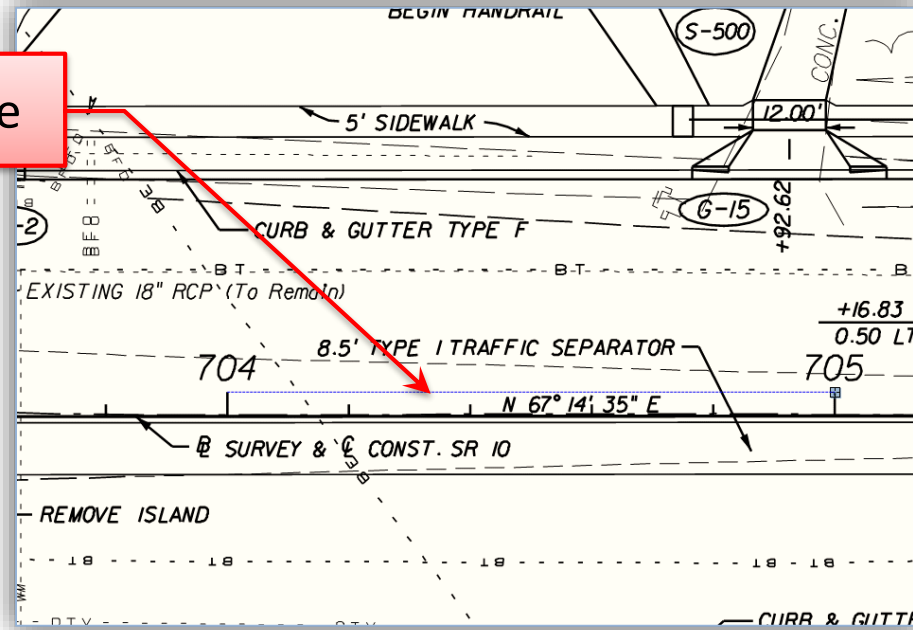
Measure



**NOTE: Calibrate before using these tools.
If measuring on sheet with different
scale, calibrate again.**

Measure: Calibrate

1. Select a known distance



2. Verify and enter desired number of decimal places.

Calibration

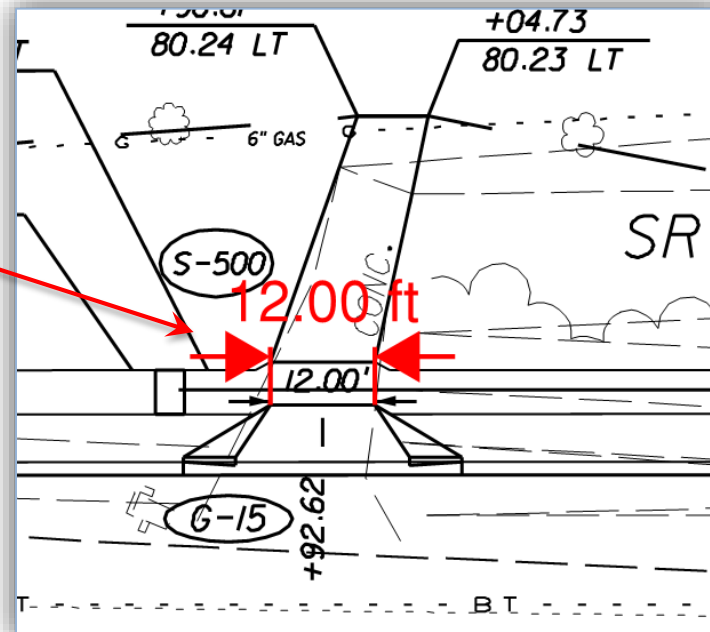
Enter measurement between the two points.

100.00 ft (Measured 2.50 in)

OK Cancel

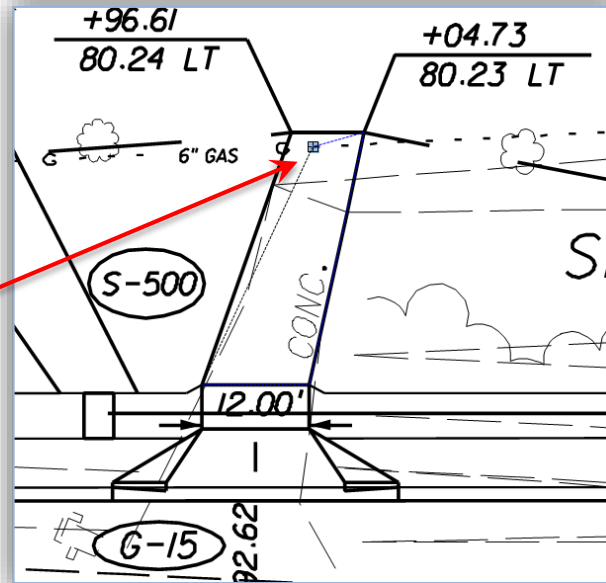
Measure: Linear Distance

“Snap” the cursor to select the distance to be measured.

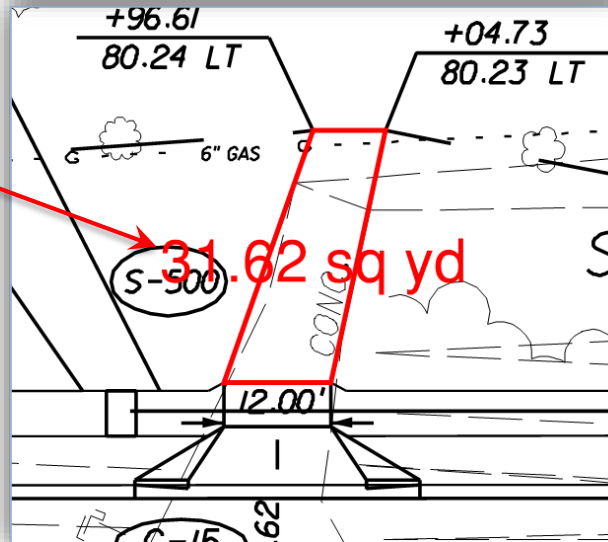


Measure: Area

1. "Snap" the cursor to the area to be measured.



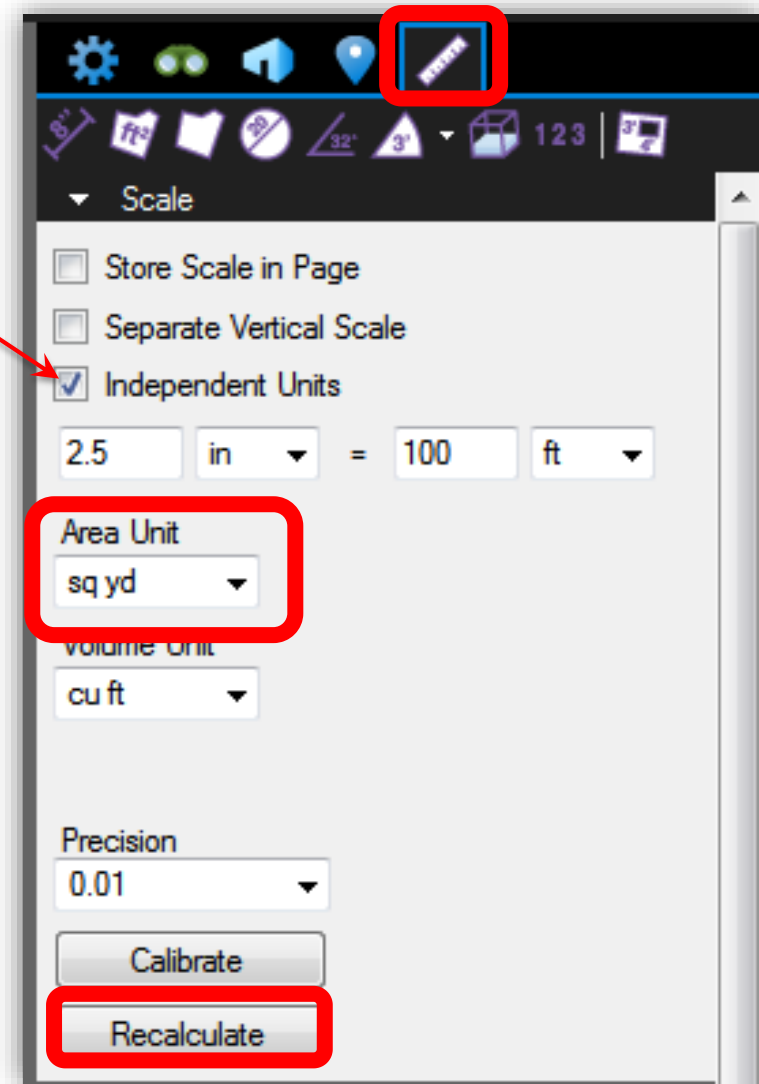
2. Once done, press "Enter".



Measure: Area Units

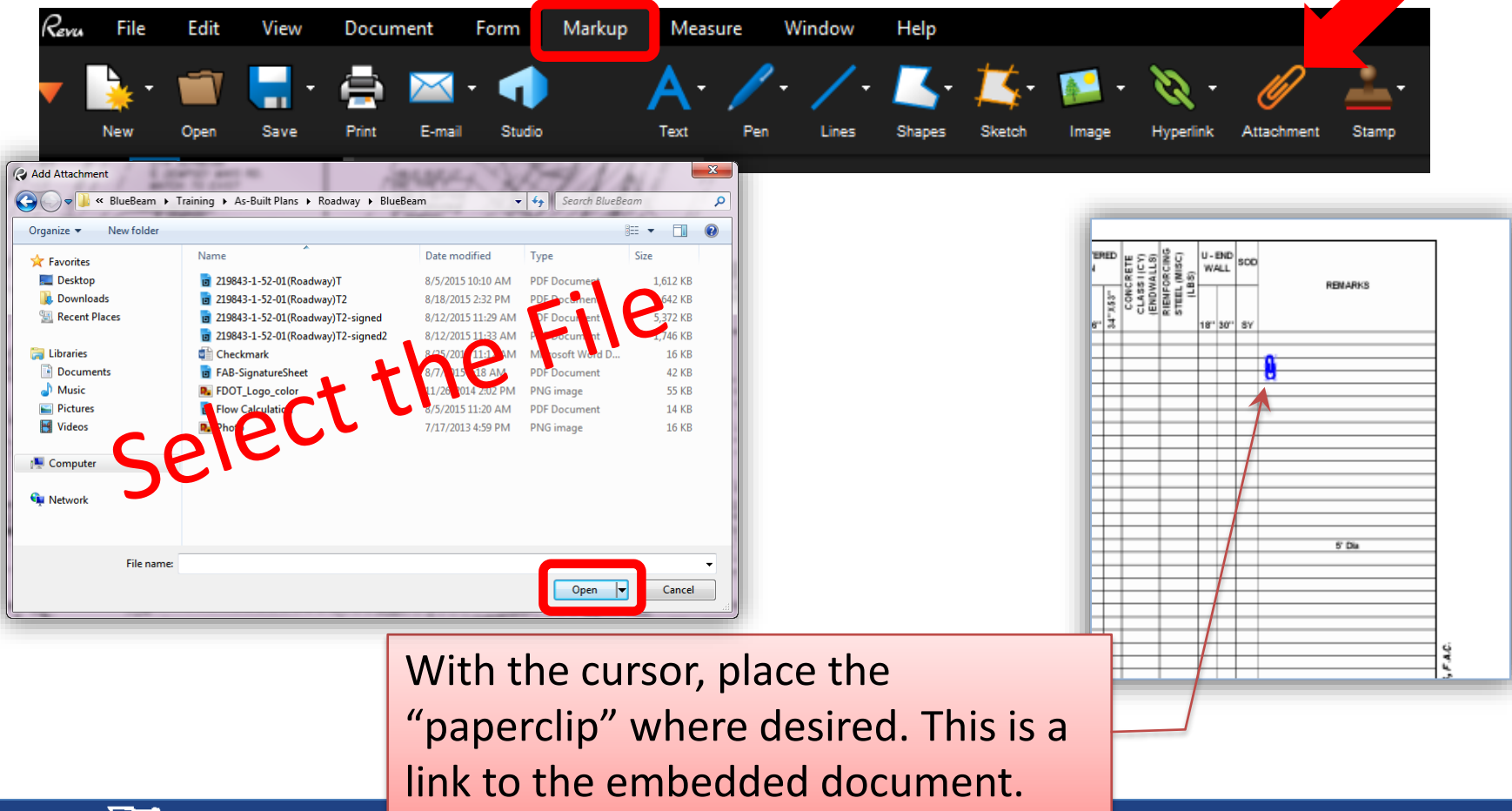
In the Properties Panel:

- Ensure “Independent Units” is checked.
- Can change units and Recalculate.



Embed Backup Documentation

This will not insert additional pages into the As-Built Plans. An embedded file will become “part” of the file. It is not an attachment. Will be listed in the Summary of Markups.



Embed Backup Documentation (Cont.)

Subject

Author: CN982MI
Subject: Calcs

Modified: 8/24/2015 2:38:01 PM
☐ Lock

Appearance

Color: ☐
Opacity:
Icon:
File Icon
Graph
Paperclip
Attachment
Tag
☐ Show Filename

File: Flow Calculation.pdf
Description:
Modified: 8/5/2015 11:20:09 AM
Size: 14 KB

Custom

File Attachments

Name	Location
Flow Calculation.pdf	Page 5

File Properties

Title:
Author:
Subject:
Project:
Revisor:
Client:

List of
embedded files

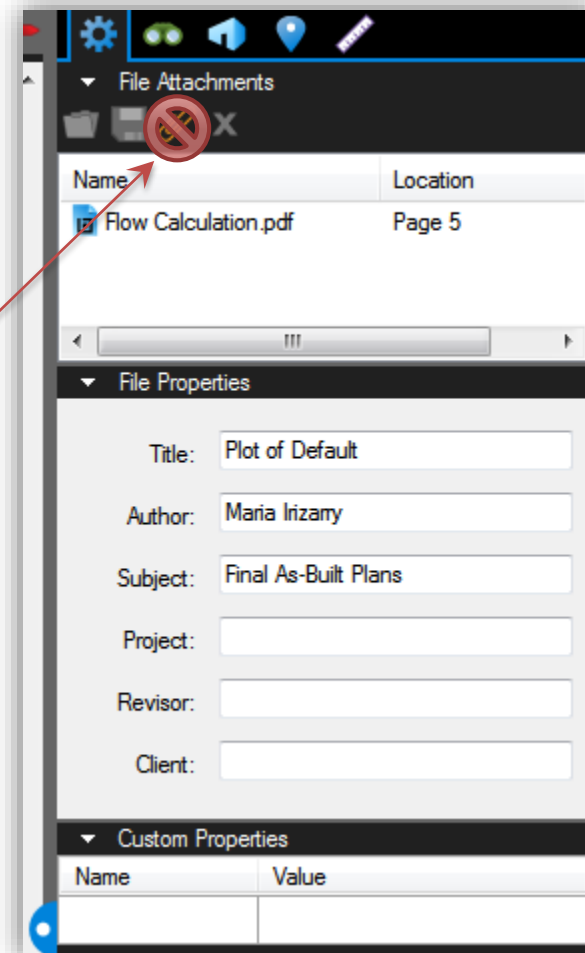
Open embedded file.
Will open in a
different tab.

Embed Backup Documentation (Cont.)

Warning:

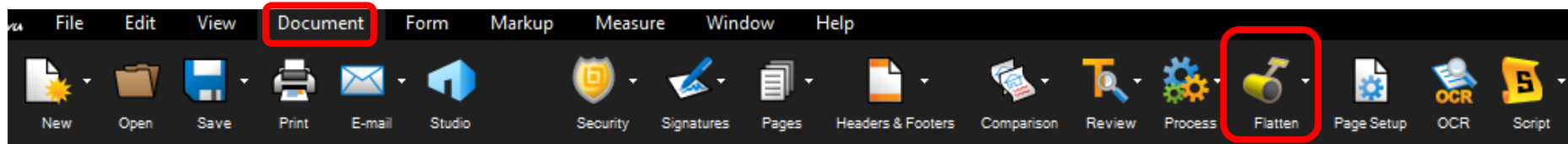
The “Attachment” option in the Properties panel allows adding a document. However, there will be no link to it and it will not be listed in the Markup panel, making it hard for the reviewer to know that there is a document attached.

DO NOT USE



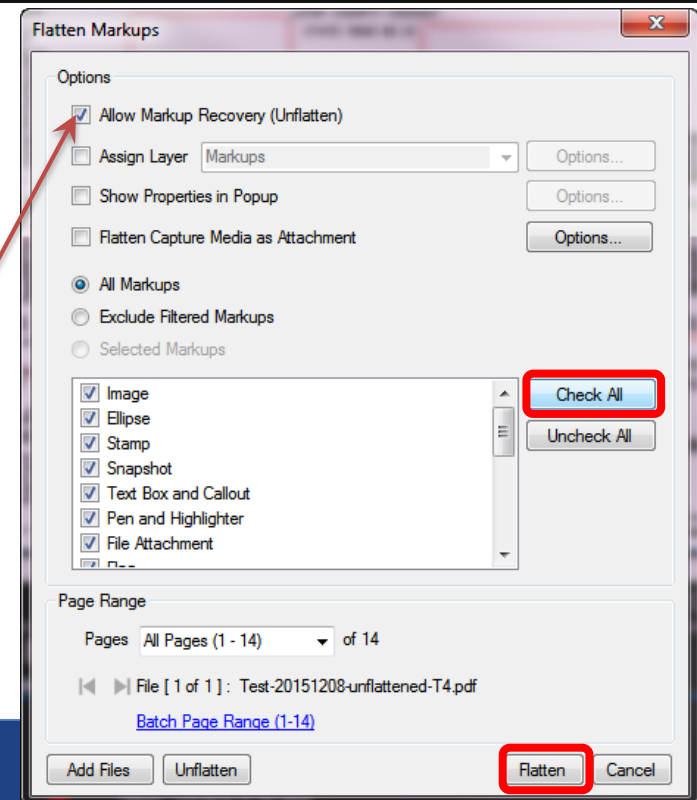
Before Signing and Sealing

- “Flatten” all changes/markups to the Final “As-Built” Plans set before digitally signing and sealing.
 - This protects the changes/markups that the RE is responsible for when digitally signing and sealing the Final “As-Built” Plans set.



This will allow the RE to “Unflatten” the changes/markups incorporated included in the Final “As-Built” Plans set, before making any changes as directed by the DFEO.

- RE will be able to digitally sign and seal the Final “As-Built” Plans set before resubmitting to the DFEO.
- “Flatten” all markups before signing and sealing (again).



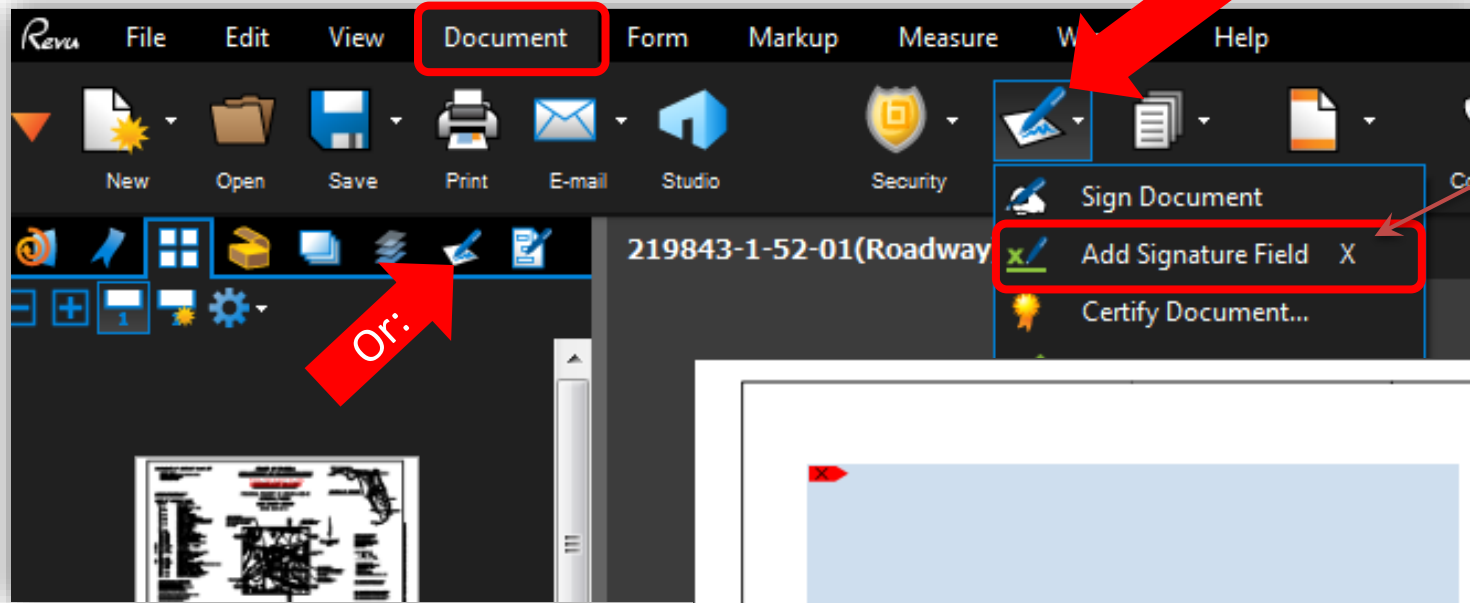
As-Built Signature Sheet

Final “As-Built” Plans Signature Sheets
are available for download at:

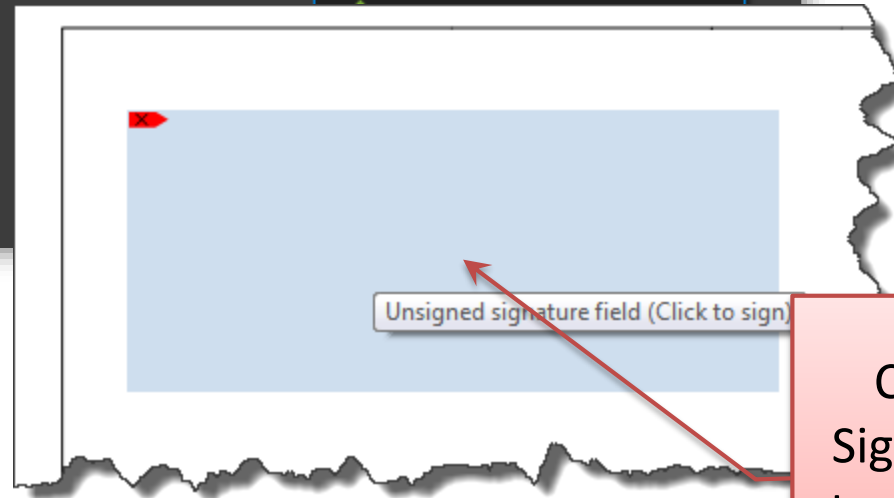
[http://www.dot.state.fl.us/construction/
eConstruction/AsBuiltPlans.shtm](http://www.dot.state.fl.us/construction/eConstruction/AsBuiltPlans.shtm)

REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	FINAL "AS-BUILT" SIGNATURE SHEET			SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		READ BY	CHECKED	FINANCIAL PROJECT ID	

Document Certification



Add one or multiple Signature Fields.



Click in the Signature Field to digitally sign the document.

Or select "Certify Document"

Document Certification (Cont.)

Sign

Digital ID:
Maria J Irizarry View... New...

Password:
Log in

Signature Type

☐ Digital Signature

☒ Document Certification

Permitted changes after certifying:

Markups, fill in forms, and digital signatures

No changes allowed

Fill in forms and digital signatures

Markups, fill in forms, and digital signatures

Reason: I have reviewed this document

Location:

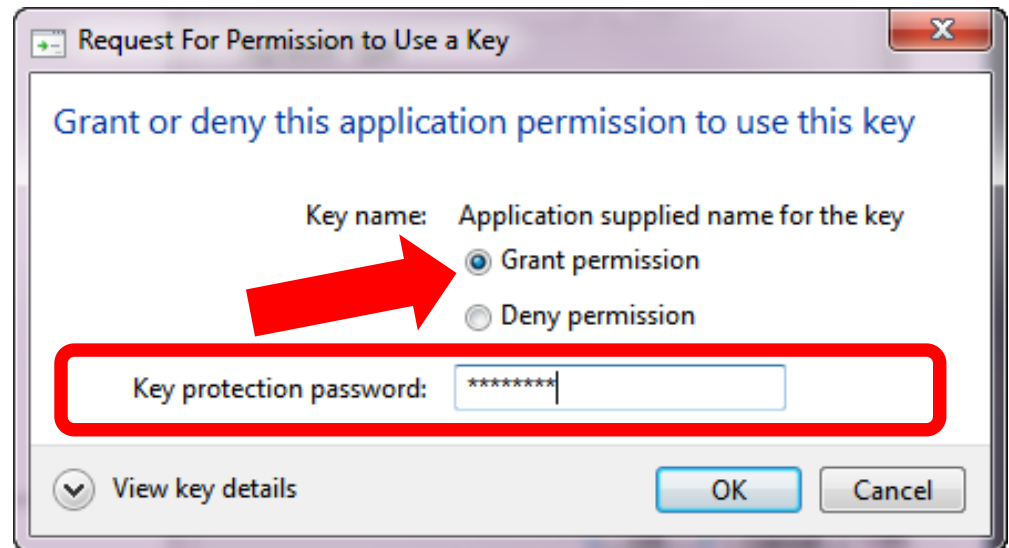
Contact Info:

OK Cancel

This will allow DFEO personnel to make markups as necessary.

Document Certification (Cont.)

Select “Grant Permission” and enter the Key Protection Password.



Document Certification (Cont.)

Sign

Digital ID:
Maria J Irizarry View... New...

Password:
Log in

Signature Type
☒ Digital Signature
☐ Document Certification
Permitted changes after certifying:
Markups, fill in forms, and digital signatures

Options
Reason: I have reviewed this document
Location:
Contact Info: FDOT

Appearance
Standard Text Edit... New...

Maria J Irizarry



Digitally signed by Maria J Irizarry
DN: cn=Maria J Irizarry, o=Florida Department of
Transportation, c=US
Reason: I have reviewed this document
Contact Info: FDOT
Date: 2018.08.07 11:54:13 -0500

OK Cancel

User will be prompted
to Save the file.

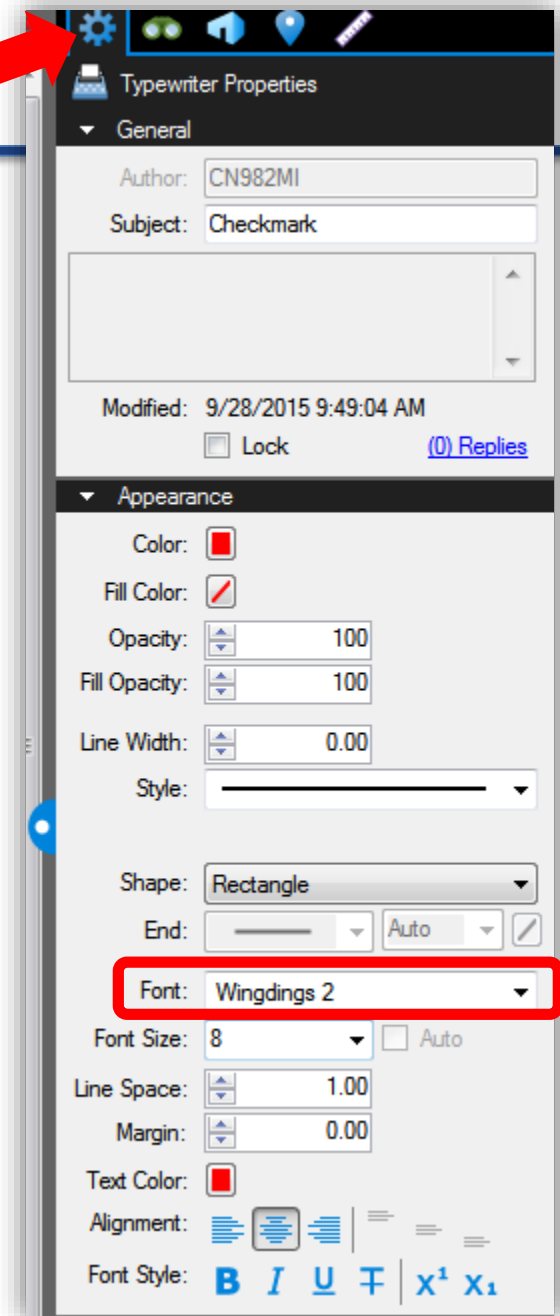
As-Built Signature Sheet

- Refer to CPAM 5.12 for requirements.
- **Note:** Green checkmark or yellow ribbon means that the Digital Certificate/Signature has been validated.

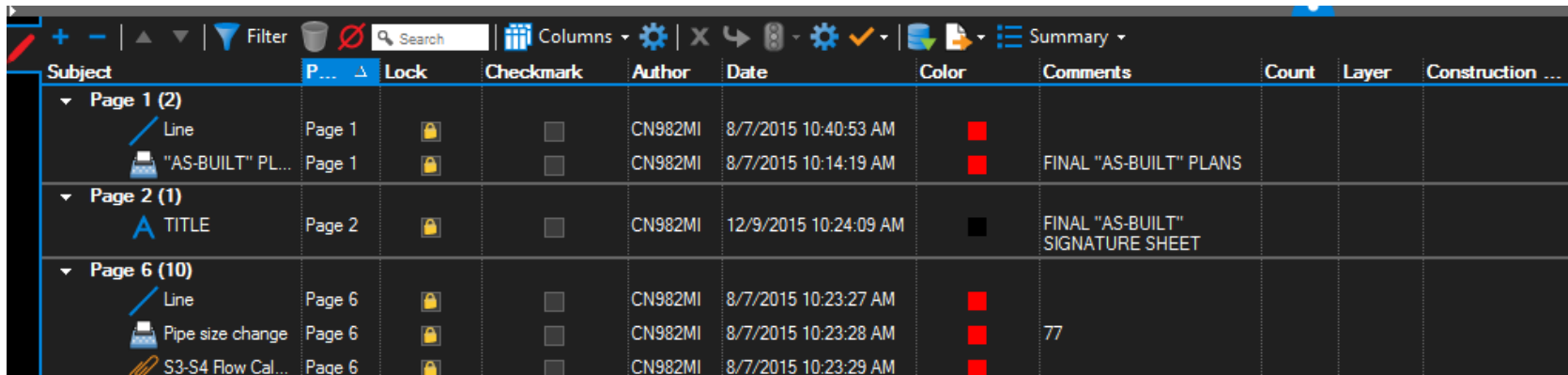
 <p>10/8/2014</p> <p>THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEET(S) IN ACCORDANCE WITH RULE 91G15-23.003 F.A.C.</p> <p>THIS PROJECT WAS CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THESE PLANS AS PROVIDED BY THE ENGINEER OF RECORD. IF CHANGES WERE MADE, THOSE CHANGES ARE INDICATED BY RED LINE REVISION.</p> <p>ROADWAY PLANS</p> <table border="1"> <thead> <tr> <th>Sheet No.</th> <th>Sheet Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Key Sheet</td> </tr> <tr> <td>3</td> <td>Final "As-Built" Signature Sheet</td> </tr> <tr> <td>35</td> <td>Summary of Pay Items</td> </tr> <tr> <td>36</td> <td>Summary of Quantities</td> </tr> <tr> <td>37</td> <td>Summary of Quantities</td> </tr> <tr> <td>39</td> <td>Summary of Quantities</td> </tr> <tr> <td>47</td> <td>Summary of Drainage Structures</td> </tr> <tr> <td>56</td> <td>Plan Sheet</td> </tr> </tbody> </table>		Sheet No.	Sheet Description	1	Key Sheet	3	Final "As-Built" Signature Sheet	35	Summary of Pay Items	36	Summary of Quantities	37	Summary of Quantities	39	Summary of Quantities	47	Summary of Drainage Structures	56	Plan Sheet	 <p>THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEET(S) IN ACCORDANCE WITH RULE 91G15-23.003 F.A.C.</p> <p>THIS PROJECT WAS CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THESE PLANS AS PROVIDED BY THE ENGINEER OF RECORD. IF CHANGES WERE MADE, THOSE CHANGES ARE INDICATED BY RED LINE REVISION.</p>	
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<table border="1"> <thead> <tr> <th colspan="2">REVIEWS</th> </tr> <tr> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>10/15/14</td> <td>Final "As-Built" Signature Sheet</td> </tr> </tbody> </table>		REVIEWS		DATE	DESCRIPTION	10/15/14	Final "As-Built" Signature Sheet	<table border="1"> <tr> <td colspan="3">STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION</td> </tr> <tr> <td>ROAD NO.</td> <td>COUNTY</td> <td>FINANCIAL PROJECT ID</td> </tr> <tr> <td>Leon</td> <td></td> <td>219843-1-02-01</td> </tr> </table>	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID	Leon		219843-1-02-01	<p>FINAL "AS-BUILT" SIGNATURE SHEET</p>	<table border="1"> <tr> <td>SHEET NO.</td> </tr> <tr> <td>3</td> </tr> </table>	SHEET NO.	3
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Leon		219843-1-02-01																			
SHEET NO.																					
3																					

Checkmark

- Select the Typewriter
- In the Properties Panel:
Change Font to “Wingdings 2”
- Type the letter P in upper case
- Can be added to “My Tools”



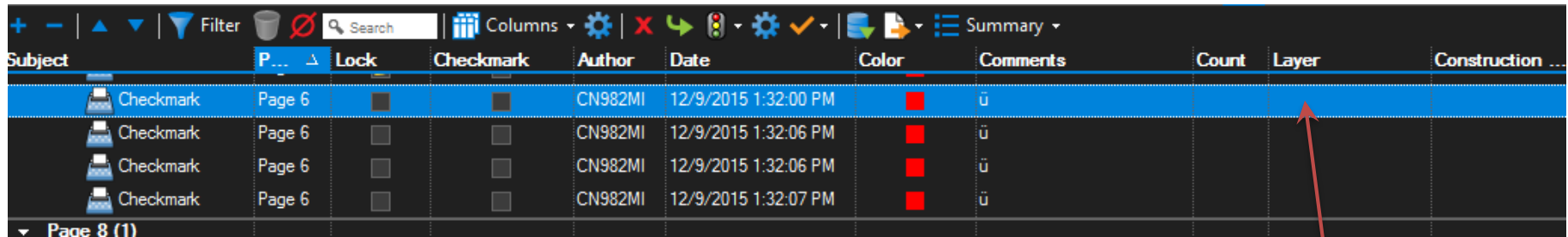
Markup Panel



Subject	P...	Lock	Checkmark	Author	Date	Color	Comments	Count	Layer	Construction ...
▼ Page 1 (2)										
Line	Page 1		<input type="checkbox"/>	CN982MI	8/7/2015 10:40:53 AM					
"AS-BUILT" PL...	Page 1		<input type="checkbox"/>	CN982MI	8/7/2015 10:14:19 AM		FINAL "AS-BUILT" PLANS			
▼ Page 2 (1)										
A TITLE	Page 2		<input type="checkbox"/>	CN982MI	12/9/2015 10:24:09 AM		FINAL "AS-BUILT" SIGNATURE SHEET			
▼ Page 6 (10)										
Line	Page 6		<input type="checkbox"/>	CN982MI	8/7/2015 10:23:27 AM					
Pipe size change	Page 6		<input type="checkbox"/>	CN982MI	8/7/2015 10:23:28 AM		77			
S3-S4 Flow Cal...	Page 6		<input type="checkbox"/>	CN982MI	8/7/2015 10:23:29 AM					

- All markups are listed in the “Markup Panel”.
- Each item on the list is a link to each markup.

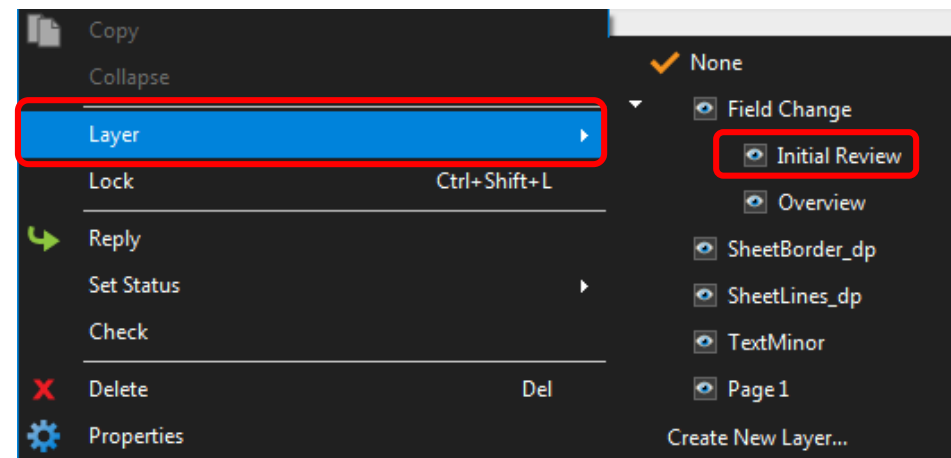
Markup Panel: Layers (DFEO ONLY)



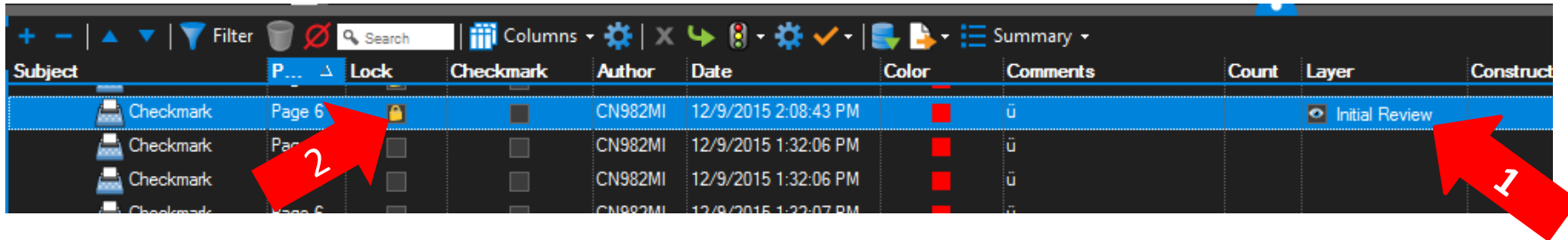
Subject	P...	Lock	Checkmark	Author	Date	Color	Comments	Count	Layer	Construction ...
Checkmark	Page 6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CN982MI	12/9/2015 1:32:00 PM	■	ū			
Checkmark	Page 6	<input type="checkbox"/>	<input type="checkbox"/>	CN982MI	12/9/2015 1:32:06 PM	■	ū			
Checkmark	Page 6	<input type="checkbox"/>	<input type="checkbox"/>	CN982MI	12/9/2015 1:32:06 PM	■	ū			
Checkmark	Page 6	<input type="checkbox"/>	<input type="checkbox"/>	CN982MI	12/9/2015 1:32:07 PM	■	ū			

For any markups by **DFEO personnel** on digitally signed and sealed Final “As-Builts” Plans:

- Before locking the markup, select the markup from the Markup Panel
- In the “Layer” column: **Right-click**
 - Select “Layer”
 - Select “Initial Review”
- Lock the markup



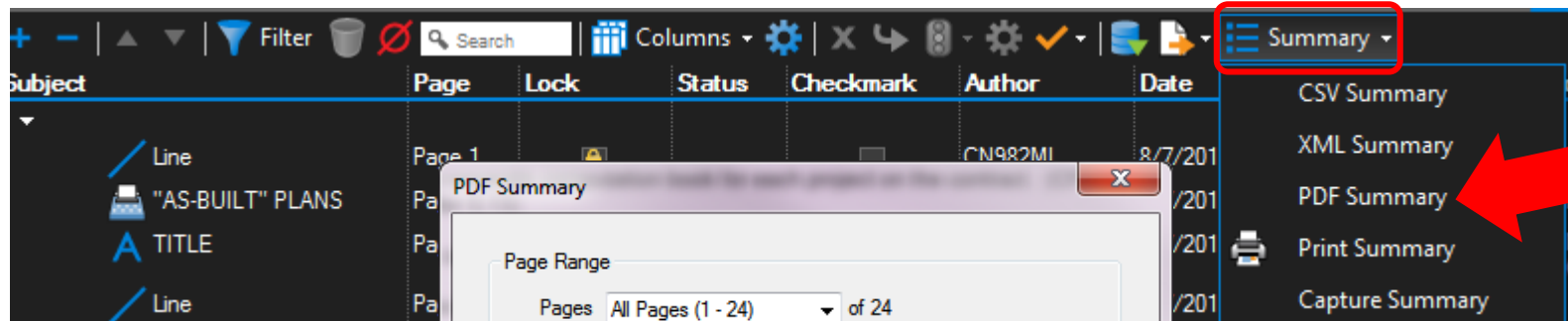
Markup Panel: Layers (DFEO ONLY) – cont.



Subject	P...	Lock	Checkmark	Author	Date	Color	Comments	Count	Layer	Construct
Checkmark	Page 6			CN982MI	12/9/2015 2:08:43 PM		ū		Initial Review	
Checkmark	Page 6			CN982MI	12/9/2015 1:32:06 PM		ū			
Checkmark	Page 6			CN982MI	12/9/2015 1:32:06 PM		ū			
Checkmark	Page 6			CN982MI	12/9/2015 1:32:07 PM		ū			

- Assigning a “Layer” to markups made by DFEO personnel on digitally signed and sealed Final “As-Built” Plans will allow the RE to correct any findings by the DFEO without altering those markups.
- The RE will be able to sign and seal only what he/she is responsible for. (See slide: [Before Signing and Sealing.](#))
- Original markups by DFEO personnel will not be erased.

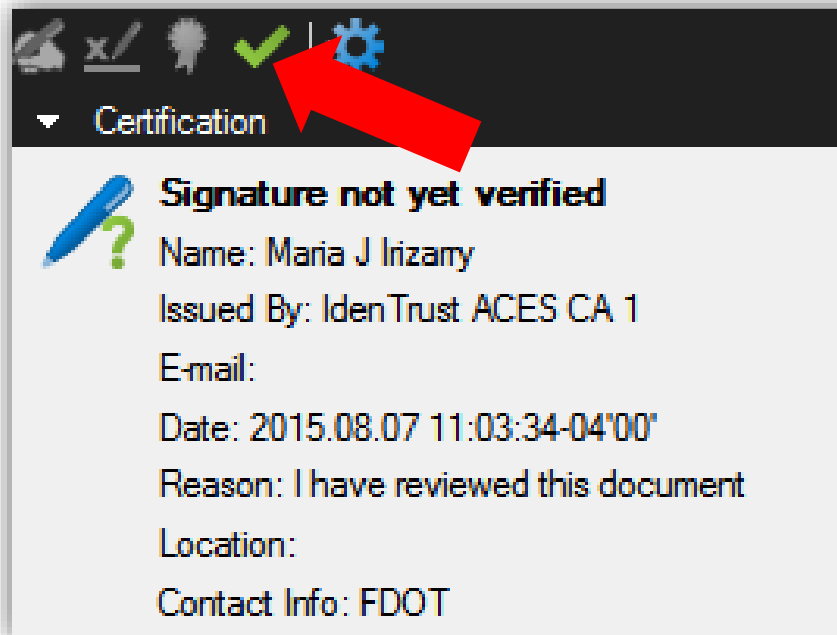
Summary of Markups



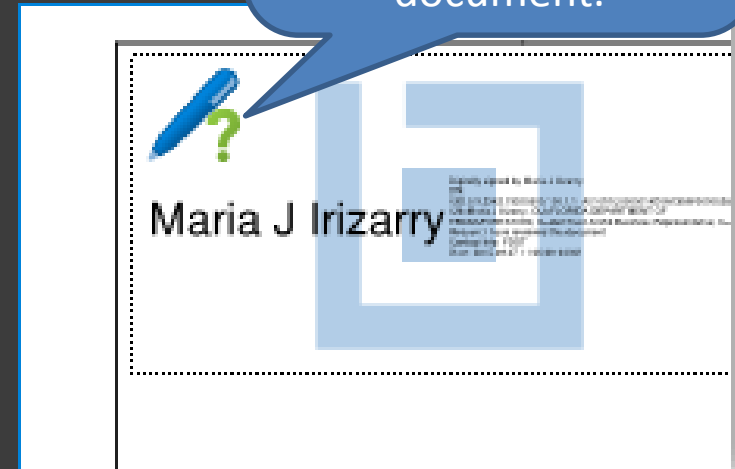
A Summary of markups will be created as a separate PDF file. Check this box **ONLY IF** the Summary of Markups is to be inserted after the last sheet of the Final As-Built Plans.

A Summary of Markups inserted at the end of the current file will include links to each markup for easy navigation through the document.
(It is **not** required to create a Summary of Markups.)

- Use color convention per [CPAM 5.12](#)
- Validate signature after any markups/changes.
 - A validated signature will have a green checkmark next to it.



A green “?” indicates that changes have been made to the previously certified document.





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TRANSPORTATION



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